

**REMARKS/ARGUMENTS**

Claims 1-3, 5-21 and 27-32 are pending in this application. By this Amendment, claim 1 is amended, claims 27-32 are added, and claim 4 is canceled without prejudice or disclaimer. Support for the claims can be found throughout the specification, including the original claims and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

**I. Rejection Under 35 U.S.C. §103(a)**

The Office Action rejects claims 1, 3-18, 20 and 21 under 35 U.S.C. §103(a) over French Patent No. 2,406,387 to Veronesi, in view of U.S. Patent No. 5,317,834 to Anderson. The rejection is respectfully traversed.

Independent claim 1 is directed to a plant cultivation system including a porous enclosure that is a conformable sealed porous bag. A water insoluble polymer is contained within the porous enclosure. The water insoluble polymer is a particulate poly(ethylene oxide) hydrogel which has been rendered insoluble in water by physical or chemical cross-linking. As acknowledged in the Office Action, Veronesi neither discloses nor suggests the features of independent claim 1, or the claimed combination of features. Further, Anderson fails to overcome the deficiencies of Veronesi.

More specifically, Veronesi discloses the use of a hydrogel that is poured into the bottom of a container, and then covered with dirt or compost. Veronesi neither discloses nor suggests that the hydrogel is contained in any type of bag, let alone a conformable sealed porous bag, as

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recited in independent claim 1. Additionally, Veronesi is essentially silent as to the formulation of the disclosed hydrogel. That is, Veronesi neither discloses nor suggests that the disclosed hydrogel is in a particulate form, nor that the hydrogel has been subjected to any type of processing, chemical, physical or otherwise, that would render it insoluble in water, as recited in independent claim 1.

Anderson discloses a system 20 for nurturing and promoting the growth of seedlings 30. The system includes a receptacle 22 that holds an active nutrient (i.e., a fertilizer) and is placed well below the top surface 32 of the soil 38 in which the seedling 30 is planted. An indicator 24 extends from the receptacle 22 to above the surface 32 of the soil 38 to provide a visual confirmation that the seedling 30 was provided with fertilizer.

It is respectfully submitted that one of ordinary skill in the art would not have been motivated to combine the teachings of Veronesi and Anderson as suggested in the Office Action. Veronesi's teachings are applicable to irrigation systems for well established plants, whereas Anderson's teachings are directed at the very narrow field of promoting the growth and survivability of seeds and seedlings. The watering/nutritive requirements of well established plants are significantly different from that required for the care and cultivation of seedlings. It is respectfully submitted that one of ordinary skill in the art would not have combined the teachings of Veronesi and Anderson, as they address problems associated with very different stages in the cultivation of a plant. For at least this reason, it is respectfully submitted that the

combination is improper, and withdrawal of the rejection on these grounds alone is respectfully requested.

However, even if improperly combined, Anderson still fails to overcome the deficiencies of Veronesi. Veronesi discloses the system 22 may also be relied upon to supply moisture, in addition to nutrients, to the roots 40 of the seedling 30. In this instance, the receptacle 22 is filled with a component that can absorb moisture from the surrounding soil 38, thus serving as a reservoir. The fine, hairlike roots 40 of the seedling 30 penetrate the sides of the receptacle 22 when they are in need of moisture. As moisture is absorbed, the receptacle swells until the bonding between the side walls 34 and 36 of the receptacle 22 is broken and the receptacle 22 bursts, thus dispersing the fertilizer and water into the soil 38. Anderson discloses another embodiment in which a similar receptacle, or pillow 46, 48, 50 is filled with fertilizer and/or moisture absorber for placement on the top surface 32 of the soil 38.

In either of these embodiments, Anderson discloses that the receptacle 22 or pillows 46, 48, 50 are filled with a urea-formaldehyde or other comparable fertilizer, and may also include a moisture absorber. However, Anderson neither discloses nor suggests that these receptacles contain a particulate hydrogel that has been subjected to any type of processing, chemical, physical or otherwise, that would render it insoluble in water, as recited in independent claim 1.

However, even if a receptacle 22 as disclosed by Anderson were filled with a hydrogel as recited in independent claim 1, and/or combined with the system disclosed by Veronesi, this combination would still not provide the advantages of the cultivation system recited in

independent claim 1. More specifically, in either embodiment of Anderson's system 20, the receptacle 22 or pillow 46 bursts when it reaches some point of saturation and/or the roots 46 of the seedling 30 have reached some point of infiltration into the receptacle 22.

This burst and subsequent dissemination of the moisture and fertilizer cannot be easily predicted, and will depend on a particular set of environmental conditions. Because of this, water release characteristics of a system which applies the receptacle 22 or pillow 46 of Anderson's system with the system disclosed by Veronesi, as suggested in the Office Action, can not be established prior to use. Additionally, the presence of fertilizer in the receptacle 22 would restrict the expansion of the moisture absorber, thereby affecting the water retention abilities of the moisture absorber, and further complicating the determination of water release characteristics.

Further, even if Anderson's receptacle 22 were adapted so that it did not reach the point of bursting, the contents of the receptacle 22 (i.e., the ratio between the fertilizer and the moisture absorber) would constantly change, thus constantly changing the water release characteristics of the receptacle 22. That is, once the fertilizer has been dispersed through the side walls 34, 36 of the receptacle 22, the moisture absorber would have more room to expand. This could, for example, result in over watering, or in a root binding situation, or in a higher than expected ratio between water and fertilizer provided to the seedling 30. Thus, even if Veronesi and Anderson were improperly combined, and the receptacle 22 disclosed by

Anderson were adapted so that it did not burst and was filled with the claimed hydrogel, there would have been no expectation of success using such a combination.

For all of these reasons, it is respectfully submitted that independent claim 1 is allowable over even the improper combination, and thus the rejection of independent claim 1 over Veronesi and Anderson should be withdrawn. Dependent claims 3-18, 20 and 21 are allowable at least for the reasons set forth above with respect to independent claim 1, from which they depend, as well as for their added features.

**II. New Claims 27-32**

New claims 27-32 are added to the application. It is respectfully submitted that new claims 27-32 meet the requirements of 35 U.S.C. §112, and are allowable at least for the reasons set forth above with respect to independent claim 1, from which they depend, as well as for their added features.

**III. Conclusion**

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, Joanna K. Mason, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this,

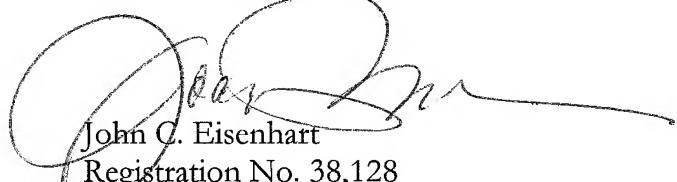
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concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and  
please credit any excess fees to such deposit account.

Respectfully submitted,  
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